

### **REMARKS**

Claims 1-16 are pending in the application.

Claims 1, 7, 9, and 13 are currently amended to add a description of the surfactant as being a neutral or basic surfactant or a combination thereof. Support for the amendments is found in the original specification, for example on page 3 at line 3.

Claims 2, 13 and 15 are currently amended to correct typographical errors.

#### ***Current Claim Amendment and Applicants' Previous Reply***

The current amendment to claim 1 conforms it to parent PCT claim 1 as amended under PCT Article 34 during the international stage. Since submitting their previous reply (submitted December 22, 2009, under 37 CFR 1.111), Applicants have realized that the claims of record in this application are the originally filed PCT claims, not the Article 34 PCT claims they expected. Thus, Applicants had prematurely based their previous reply on the Article 34 claim 1.

Applicants' current reply is based on the currently amended claims. Applicants will address the rejections later. First, Applicants note information about anticipation that they will rely upon.

#### ***Anticipation***

As the Examiner knows, anticipation under §102 is a factual determination. This factual determination is guided by case law, including the following:

"A rejection for anticipation under *section 102* requires that each and every limitation of the claimed invention be disclosed in a single prior art reference." [*In re David C. Paulsen*, 30 F.3d 1475 (1479), 31 USPQ2d 1671; *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990). "In addition, the reference must be enabling and describe the applicant's claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention." *Id.*

See also MPEP §2131:

“A claim is anticipated only if each and every element as set forth in the claim is found either expressly or inherently described in a single prior art reference.” *Vendegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “When a claim covers several structures of compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.” *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001).

See also MPEP §2131 and MPEP §2131.02:

“The identical invention must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). “The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required.” *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

In circumstances where a claimed invention is not specifically disclosed in a reference, it would be necessary to pick, choose or select portions of relevant teachings, if any, in the reference and combine them to arrive at an anticipating combination of the portions. For example, there may be circumstances where a reference discloses a generic composition A containing optional additional generic ingredients B, C, D, or X. While it could be argued that the reference thereby discloses subgenus compositions AB, AC, AD, and AX, it could not be properly argued without picking, choosing, or selecting and combining portions of teachings that the reference discloses a narrower subgenus composition ACX or a more narrower subgenus composition  $AC_{sp}X_{sp}$ , wherein  $C_{sp}$  and  $X_{sp}$  are specific examples of respective generic ingredients C and X.

But circumstances in which this picking, choosing, or selecting of portions of teachings and combining them is proper for determining anticipation are quite limited.

For example, see *In re Arkley, Eardley, and Long*:

“Thus, for the instant rejection under 35 U.S.C. 102(e) to have been proper, the Flynn reference must clearly and unequivocally disclose the claimed compound or direct those skilled in the art to the compound without *any* need for picking and choosing . . . Such picking and choosing may be entirely proper in the making of a 103, obviousness rejection, where the applicant must be afforded an opportunity to rebut with objective evidence any inference of obviousness which may arise from the *similarity* of the subject matter which he claims to the prior art, but it has no place in the making of a 102, anticipation rejection.” *In re Arkley, Eardley, and Long*, 455 F.2d 586, 587, 172 USPQ 524, 530 (CCPA 1972).

See also MPEP §2131.02:

When “it is necessary to select portions of teachings within a reference and combine them, e.g., select various substituents from a list of alternatives given for placement at specific sites on a generic chemical formula to arrive at a specific composition, anticipation can only be found if the classes of substituents are sufficiently limited or well delineated. *Ex parte A*, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990). If one of ordinary skill in the art is able to ‘at once envisage’ the specific compound within the generic chemical formula, the compound is anticipated. One of ordinary skill in the art must be able to draw the structural formula or write the name of each of the compounds included in the generic formula before any of the compounds can be ‘at once envisaged.’” (emphasis added)

If the above recitation is applied to compositions comprising alternative ingredients, an analogous statement would be that if one of ordinary skill in the art is able to “at once envisage” a specific composition of ingredients from a list of alternatives given for a generic composition of the ingredients, the specific composition would be anticipated. By analogy then, one of ordinary skill in the art should be able to draw the structural formula or write the name of each of the ingredients included in the generic composition of ingredients before any of the compositions can be “at once envisaged.” For example, refer again to the generic composition A containing optional additional generic ingredients B, C, D, or X. One of ordinary skill in the art should be able to draw the structural formula or write the name of each of the specific ingredients for generic ingredient C and for

generic ingredient X before any of the subgenus compositions ACX or AC<sub>sp</sub>X<sub>sp</sub> can be “at once envisaged.”

Thus, it is not enough to merely show that a prior art genus embraces a claimed subgenus or species for there to properly determine anticipation of the subgenus or species. More than that, one of ordinary skill in the art must be able to “*at once envisage*” the claimed subgenus or species from the prior art genus.

***Claim Rejections – 35 U.S.C. § 102***

In the Final Office Action, claim 1-15 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Sonnenschein et al., US 2002/0033227. In the Final Office Action it was alleged that a two-part polymerizable composition of Sonnenschein et al. US ‘227 contains a composition of the ingredients of the instant two-part adhesive formulation. Particularly, it is argued on page 2 of the Final Office Action that “Sonnenschein et al. teach a polymerizable adhesive composition ([0013]) that is a 2-part formulation ([0055]). The first part contains the complexes of the composition, and the other part contains the initiator ([0055]). The complex of the composition contains a trialkylborane-organonitrogen complex ([0011]), water carrier ([0068]), and polyethylene glycol diacrylate surfactant ([0062]). The second part contains an initiator of methylmethacrylate, poly(methylmethacrylate), and acrylic acid ([0085]).”

Applicants disagree because the facts in the Final Office Action are in error for the following reasons:

- Reason 1: Sonnenschein et al. US ‘227 does not disclose, either literally or inherently, an embodiment or example that would anticipate the instant 2-part formulation. A composition disclosed only by a genus composition comprising alternatives for two or more ingredients does not specifically disclose each of the individual compositions that would result from the combination of all possible variants within such alternatives. While the genus composition of Sonnenschein et al. US ‘227 encompasses the composition of the trialkylborane-organonitrogen complex, water, and polyethylene glycol

diacrylate, it does not as a matter of law disclose it. The composition does not appear literally in (i.e., does not appear in a disclosed embodiment or example) or inherently from (i.e., cannot be at once envisaged by one of ordinary skill in the art) Sonnenschein et al. US '227. Instead it was improperly assembled in the Final Office Action by picking and choosing from among numerous classes and examples therein of the ingredients of Sonnenschein et al. US '227 with the benefit of hindsight afforded by the instant application. Since Sonnenschein et al. US '227 does not recite the composition, it cannot and does not anticipate the instant claims.

- Reason 2: the polyethylene glycol diacrylate relied on in the rejection is not a surfactant and thus not an instant neutral or basic surfactant or combination thereof. While the genus composition of Sonnenschein et al. US '227 encompasses a surfactant because of its open-ended "comprising" language, it does not as a matter of law disclose it. The surfactant does not appear literally in (i.e., does not appear in a disclosed embodiment or example) or inherently from (i.e., cannot be at once envisaged by one of ordinary skill in the art) Sonnenschein et al. US '227. Instead the Final Office Action has improperly and unsupportedly asserted that the polyethylene glycol diacrylate of Sonnenschein et al. US '227 is a neutral or basic surfactant. Applicants have shown later herein that polyethylene glycol diacrylate is not a surfactant, and thus not a neutral or basic surfactant, as its structure is clearly inconsistent with the meaning of the term surfactant as it is understood and used in the art. Since Sonnenschein et al. US '227 cannot and does not recite a surfactant, it does not anticipate the instant claims.

Reason 1: *Sonnenschein et al. US '227 does not disclose, either literally or inherently, an embodiment or example that would anticipate the instant 2-part formulation.*

Reason 1 regarding rejection of claims 1, 7, and 9:

While the ingredients cited in the Final Office Action may be found separately in Sonnenschein et al. US '227, the fact is that a composition comprising the particular combination of trialkylborane-organonitrogen complex, water, and polyethylene glycol

diacrylate mentioned in the Final Office Action is not literally disclosed or known in Sonnenschein et al. US '227. Nowhere in the Final Office Action is it pointed out where such a particular combination could be found in Sonnenschein et al. US '227.

In the Final Office Action, the two ingredient combination of trialkylborane-organonitrogen complex and water and the two ingredient combination of trialkylborane-organonitrogen complex and polyethylene glycol diacrylate are picked, chosen or selected. Then, these two ingredient combinations are assembled in the Final Office Action to arrive at the combination of trialkylborane-organonitrogen complex, water, and polyethylene glycol diacrylate. Based on the aforementioned law, this latter combination is improper for determining anticipation.

For example, the Final Office Action picks and chooses classes of ingredients, and within those classes particular species mentioned in Sonnenschein et al. US '227, and combines them to arrive at the combination of trialkylborane-organonitrogen complex, water, and polyethylene glycol diacrylate mentioned in the Final Office Action. For example, Sonnenschein et al. US '227 contemplate a variety of applications {[0067]}. Paragraph [0068] of Sonnenschein et al. US '227 mentions that compositions thereof can be used in coating applications. In coating applications the composition may further comprise a carrier. The carrier can be water or a solvent. Sonnenschein et al. US '227 mentions water only in paragraphs [0068] and [0070]. Thus, to arrive at water as an ingredient for the combination mentioned in the Final Office Action, one of ordinary skill in the art would first have to select coating applications from all of the applications for which the prior art composition is useful, then further select a subset of those coating applications that further comprise a carrier, and then select as the carrier water from a list of possible carriers that includes water and solvents, which are numerous and mostly unspecified in Sonnenschein et al. US '227.

Likewise, Sonnenschein et al. US '227 contemplate a variety of additives ([0060]). Paragraph [0062] of Sonnenschein et al. US '227 mentions that the compositions thereof can contain an adjuvant (also referred to as an additive) that is a cross-linking agent and discloses a variety of cross-linking agents ([0062]). The cross-

linking agent includes the various diacrylates referred to above as possible acrylic modifying monomers as well as other materials ([0062]). The cross-linking agent can be polyethylene glycol diacrylate ([0062]). Sonnenschein et al. US '227 mentions polyethylene glycol diacrylate only in paragraph [0062]. Thus, to arrive at polyethylene glycol diacrylate as an ingredient for the combination mentioned in the Final Office Action, one of ordinary skill in the art would first have to select a subset of compositions of Sonnenschein et al. US '227 that further contain an optional additive ([0060], also referred to as an adjuvant), then further select an additive that is a cross-linking agent from the variety of additives, and then still further select a cross-linking agent that is the polyethylene glycol diacrylate from the variety of cross-linking agents.

Many of the ingredient alternatives from which the aforementioned ingredient selections in the Final Office Action have been made are not specified in Sonnenschein et al. US '227 (see the underlined portions in the immediately two preceding paragraphs). The ingredient alternatives are far more varied and numerous than would allow one of ordinary skill in the art to draw the structural formula or write the name of each of the ingredients in Sonnenschein et al. US '227 and "at once envisage" the combination of trialkylborane-organonitrogen complex, water, and polyethylene glycol diacrylate.

It was argued on pages 5 to 6 (item 6(b)) of the Final Office Action that "the [Sonnenschein et al. US '227] reference does not need to disclose a specific embodiment/example that incorporates everything required by the instant claim in order to be anticipatory." Applicants disagree and point out that this is clearly not true for literal anticipation as pointed out by the previously referenced established standard therefor.

It was also argued on page 6 (item 6(b)) of the Final Office Action that, "Furthermore, it is clear that the [Sonnenschein et al. US '227] reference disclose [*sic*] the use of polyethylene glycol diacrylate and water solvent." Applicants do not dispute that Sonnenschein et al. US '227 discloses the use of polyethylene glycol diacrylate in a generic composition and the use of water solvent in another generic composition. But Applicants do not agree that Sonnenschein et al. US '227 discloses their use in a same

generic or specific composition. In fact nowhere does Sonnenschein et al. US '227 disclose that water and polyethylene glycol diacrylate can be used together. Such compositions are not literally or inherently disclosed in Sonnenschein et al. US '227.

A composition disclosed only by a genus composition comprising alternatives for two or more ingredients does not specifically disclose each of the individual compositions that would result from the combination of all possible variants within such alternatives. While the genus composition of Sonnenschein et al. US '227 encompasses the composition of the trialkylborane-organonitrogen complex, water, and polyethylene glycol diacrylate, it does not as a matter of law disclose it. The composition does not appear literally in (i.e., does not appear in a disclosed embodiment or example) or inherently from (i.e., cannot be at once envisaged by one of ordinary skill in the art) Sonnenschein et al. US '227. Instead it was improperly assembled in the Final Office Action by picking and choosing from among numerous classes and examples therein of the ingredients of Sonnenschein et al. US '227 with the benefit of hindsight afforded by the instant application. Since Sonnenschein et al. US '227 does not recite the composition, it cannot and does not anticipate the instant claims.

Accordingly, even if polyethylene glycol diacrylate could be considered to be an example of the instant neutral or basic surfactant, which Applicants believe and discuss later that it cannot be so considered, Sonnenschein et al. US '227 does not literally or inherently disclose the instant 2-part adhesive formulation as in claims 1 or 7 or the composition as in claim 9. In view of the above remarks, claims 1, 7, and 9 are patentable under 35 USC §102(b) in view of Sonnenschein et al. US '227.

Reason 1 regarding rejection of claims 2 and 3:

Sonnenschein et al. US '227 mentions, among other things, poly(methyl methacrylate) as an optional thickener additive ([0060], [0071], and [0085]) and certain monomers, oligomers, and polymers that contain olefinic unsaturation and which can polymerize by free radical polymerization such as acrylamide and methyl methacrylate and oligomers and polymers derived from acrylates and methacrylates including methyl methacrylate ([0048]). But Sonnenschein et al. US '227 does not literally or inherently



disclose the instant 2-part adhesive formulation as in claim 1 for the reasons mentioned above. So Sonnenschein et al. US '227 does not literally or inherently disclose the instant 2-part adhesive formulation as in dependent instant claim 2 wherein the instant 2-part adhesive formulation as in claim 1 is further limited in claim 2 by "protected alkylborane complex is a trialkylborane-organonitrogen complex and the second part further includes an acrylic polymer as a thixotropic agent;" or the instant 2-part adhesive formulation as in dependent instant claim 3 wherein the instant 2-part adhesive formulation as in claim 2 is further limited in claim 3 by "the thixotropic agent is a poly(methyl methacrylate)." Accordingly, even if polyethylene glycol diacrylate could be considered to be an example of the instant neutral or basic surfactant, which Applicants believe and discuss later that it cannot be so considered, claims 2 and 3 are patentable under 35 USC §102(b) in view of Sonnenschein et al. US '227.

Reason 1 regarding rejection of claim 4:

Sonnenschein et al. US '227 mentions, among other things, poly(methyl methacrylate) as an optional thickener additive ([0060], [0071], and [0085]) and other vinyl end-capped acrylates ([0060]). Sonnenschein et al. US '227 also mentions, among other things, certain monomers, oligomers, and polymers that contain olefinic unsaturation and which can polymerize by free radical polymerization such as acrylamide and methyl methacrylate and oligomers and polymers derived from acrylates and methacrylates including methyl methacrylate ([0048]). But Sonnenschein et al. US '227 does not mention an additive that is the polyvinyl pyrrolidone, polyetheramine, polyethylene glycol, polyethylene glycol-polypropylene glycol copolymer, polyacrylamide, hydroxycellulose, polyvinyl alcohol, polyacrylic acid salt, or polymethacrylic acid salt, or combination thereof as in instant claim 4. The polyethylene glycol diacrylate and other vinyl end-capped acrylate cross-linking agents of Sonnenschein et al. US '227 are not mentioned in instant claim 4. Accordingly, even if polyethylene glycol diacrylate could be considered to be an example of the instant neutral or basic surfactant, which Applicants believe and discuss later that it cannot be so considered, Sonnenschein et al. US '227 does not literally or inherently disclose the instant 2-part adhesive formulation as in claim 4, and thus claim 4 is patentable under 35 USC §102(b) in view of Sonnenschein et al. US '227.

Reason 1 regarding rejection of claims 5 and 6:

Sonnenschein et al. US '227 mentions, among other things, preferred classes of compounds containing olefinic unsaturation that are monomers, oligomers, polymers, and mixtures thereof derived from acrylates and methacrylates including methyl methacrylate ([0048]). Sonnenschein et al. US '227 mentions a compound that is reactive with an amine so as to liberate the organoborane such as acrylic acid or methacrylic acid ([0050]. But Sonnenschein et al. US '227 does not literally or inherently disclose the instant 2-part adhesive formulation as in claim 1 for the reasons mentioned above. So Sonnenschein et al. US '227 does not literally or inherently disclose the instant 2-part adhesive formulation as in dependent instant claim 5 wherein the instant 2-part adhesive formulation as in claim 3 is further limited in claim 5 by "the second part of the 2-part adhesive formulation includes an acrylic monomer selected from the group consisting of hydroxyethyl acrylate, hydroxybutyl methacrylate, and methyl methacrylate; and a trialkylborane initiator selected from the group consisting of acrylic acid and methacrylic acid;" or the instant 2-part adhesive formulation as in dependent instant claim 6 wherein the instant 2-part adhesive formulation as in claim 5 is further limited in claim 6 by "the acrylic monomer includes methyl methacrylate and the trialkylborane initiator includes acrylic acid." Accordingly, even if polyethylene glycol diacrylate could be considered to be an example of the instant neutral or basic surfactant, which Applicants believe and discuss later that it cannot be so considered, claims 5 and 6 are patentable under 35 USC §102(b) in view of Sonnenschein et al. US '227.

Reason 1 regarding rejection of claim 8:

Sonnenschein et al. US '227 mentions, among other things, optional additives such as peroxides ([0063]), inhibitors ([0064] and [0068]) such as hydroquinone ([0064]), non-reactive colorants and fillers ([0065]), pigments and UV stabilizers ([0068]). But Sonnenschein et al. US '227 does not literally or inherently disclose the instant 2-part adhesive formulation as in claim 7 for the reasons mentioned above. So Sonnenschein et al. US '227 does not literally or inherently disclose the instant 2-part adhesive formulation as in dependent instant claim 8 wherein the instant 2-part adhesive formulation as in claim 7 is further limited in claim 8 by "includes in either the first or

second part or both a pigment, a dye, a filler, or an antioxidant, or a combination thereof.” Accordingly, even if polyethylene glycol diacrylate could be considered to be an example of the instant neutral or basic surfactant, which Applicants believe and discuss later that it cannot be so considered, claim 8 is patentable under 35 USC §102(b) in view of Sonnenschein et al. US ‘227.

Reason 1 regarding rejection of claims 10-12:

Sonnenschein et al. US ‘227 does not literally or inherently disclose the instant composition as in claim 9 for the reasons mentioned above. So Sonnenschein et al. US ‘227 does not literally or inherently disclose the instant composition as in dependent instant claim 10 wherein the instant composition as in claim 9 is further limited in claim 10 by “further includes a protected alkylborane complex;” or the instant composition as in claim 10 wherein the instant composition as in claim 10 is further limited in claim 11 by “the protected alkylborane complex is a trialkylborane-organonitrogen complex;” or wherein the instant composition as in claim 10 is further limited in claim 12 by “forms a cured adhesive.” Accordingly, even if polyethylene glycol diacrylate could be considered to be an example of the instant neutral or basic surfactant, which Applicants believe and discuss later that it cannot be so considered, claim 10 is patentable under 35 USC §102(b) in view of Sonnenschein et al. US ‘227.

Reason 1 regarding rejection of claim 13:

While the ingredients cited in the Final Office Action may be found separately in Sonnenschein et al. US ‘227, a composition comprising the particular combination of trialkylborane-organonitrogen complex, water, and polyethylene glycol diacrylate mentioned in the Final Office Action is not disclosed or known in Sonnenschein et al. US ‘227. Accordingly, Sonnenschein et al. US ‘227 does not literally or inherently disclose the instant 2-part adhesive formulation for the reasons mentioned previously, and so Sonnenschein et al. US ‘227 does not literally or inherently disclose the instant method comprising 1) contacting parts of the instant 2-part adhesive formulation together to form a curing acrylic-based adhesive; and 2) applying the curing adhesive to a low surface energy substrate. Accordingly, even if polyethylene glycol diacrylate could be considered to be an example of the instant neutral or basic surfactant, which Applicants believe and

discuss later that it cannot be so considered, claim 13 is patentable under 35 USC §102(b) in view of Sonnenschein et al. US '227.

Reason 1 regarding rejection of claims 14 and 15:

Sonnenschein et al. US '227 mentions, among other things, substrates including polymers, wood, ceramics, concrete, glass, and primed metals ([0067]). Sonnenschein et al. US '227 also mentions low surface energy substrates such as polyethylene, polypropylene, polyethyleneterephthalate and polytetrafluoroethylene, and their co-polymers ([0067]) and low surface energy plastic or polymeric substrates such as polyethylene, polypropylene, acrylonitrile-butadiene-styrene, polyamides, syndiotactic polystyrene, olefin containing block co-polymers, and fluorinated polymers such as polytetrafluoroethylene (TEFLON) ([0071]). But Sonnenschein et al. US '227 does not literally or inherently disclose the instant method as in claim 13 for the reasons mentioned above. So Sonnenschein et al. US '227 does not literally or inherently disclose the instant method as in dependent instant claim 14 wherein the instant method as in claim 13 is further limited in claim 14 by "steps 1) and 2) are carried out concomitantly;" or wherein the instant method as in claim 13 is further limited in claim 15 by "the low surface energy substrate is selected from the group consisting of polyethylenes, polypropylenes, ethylene- $\alpha$ -olefin copolymers, hydrogenated polyisoprenes, polyvinylidene fluorides, polytetrafluoroethylenes, polyesters, polyamides, polyacetals, and polystyrenes." Accordingly, even if polyethylene glycol diacrylate could be considered to be an example of the instant neutral or basic surfactant, which Applicants believe and discuss later that it cannot be so considered, claims 14 and 15 are patentable under 35 USC §102(b) in view of Sonnenschein et al. US '227.

In view of the above remarks, claims 1-15 are patentable under 35 USC §102(b) in view of Sonnenschein et al. US '227.

Reason 2: The polyethylene glycol diacrylate relied on in the rejection is not a surfactant and thus not an instant neutral or basic surfactant or combination thereof.

Applicants disagree with the unsupported assertion in the Final Office Action that the polyethylene glycol diacrylate cross-linking agent of Sonnenschein et al. US '227

would be an example of an instant neutral or basic surfactant. The Final Office Action has not established a plausible basis for this allegation. Applicants show below that polyethylene glycol diacrylate is not a surfactant.

The term “surfactant” is short for surface-active agent. Enclosed herewith is a definition of “surfactant” referring to a definition of “surface-active agent” from Hawley’s Condensed Chemical Dictionary, 13<sup>th</sup> edition, Van Nostrand Reinhold, New York, 1997, page 1066. This definition states that a surfactant is:

“[a]ny compound that reduces surface tension when dissolved in water or water solutions, or that reduces interfacial tension between two liquids, or between a liquid and a solid. There are three categories of surface-active agents: detergents, wetting agents, and emulsifiers; all use the same basic chemical mechanism and differ chiefly in the nature of the surfaces involved.”

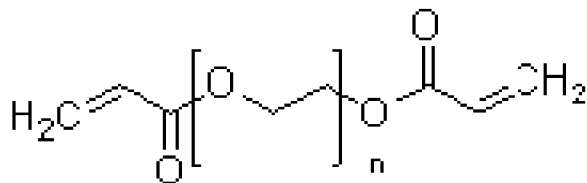
Surfactants are known to be amphiphilic materials that produce a reduction in interfacial tension in solution. For example, see US 7,691,383 B2, column 16, lines 32-33 (The Board of Trustees of the University of Illinois); US 7,138,436 B2, column 3, lines 64-67 (3M Innovative Properties Company); US 7,060,248 B2, column 42, lines 65-66 (Bristol-Myers Squibb Pharma Company); US 6,322,770 B1, column 46, lines 30-32 (Du Pont Pharmaceuticals Company); and US 6,218,468 B1, column 2, lines 61-65 (BASF Aktiengesellschaft).

Enclosed herewith is a definition of “amphiphilic” from Hawley’s Condensed Chemical Dictionary, 13<sup>th</sup> edition, Van Nostrand Reinhold, New York, 1997, page 69. This definition states that amphiphilic is a:

“[m]olecule having a water-soluble polar head (hydrophilic) and a water-insoluble organic tail (hydrophobic), e.g., octyl alcohol, sodium stearate. Such molecules are necessary for emulsion formation and for controlling the structure of liquid crystals.”

In contrast, polyethylene glycol diacrylate is not an amphiphilic material and nowhere does Sonnenschein et al. US ‘227 mention that polyethylene glycol diacrylate can function as a detergent, wetting agent, or emulsifier. The polyethylene glycol

diacrylate cross-linking agent is a bis(acrylate end-capped) polyethylene glycol, which as its name indicates is polymeric material having a structure of general formula:



wherein n is a number of ethylene glycol repeat units. Applicants enclose herewith a printed web page from [www.chemicaland21.com](http://www.chemicaland21.com)

(<http://chemicaland21.com/industrialchem/functional%20Monomer/POLYETHYLENE%20GLYCOL%20DIACRYLATE.htm>) showing the structure of polyethylene glycol diacrylate.

Since polyethylene glycol diacrylate has virtually identical ends and is substantially symmetrical, it clearly lacks at least one of the hydrophilic head and hydrophobic tail of an amphiphilic material. After all, a same functional group cannot be both hydrophilic and hydrophobic. Further, nowhere in Sonnenschein et al. US '227 is polyethylene glycol diacrylate or other cross-linking agents or optional additives disclosed as being surfactants.

In the Final Office Action (page 7, item 6(d), it was alleged that “the [Sonnenschein et al. US ‘227] reference discloses the same surfactant required by the instant invention (claim 4).” As shown above, this cannot be and is not true.

While the genus composition of Sonnenschein et al. US ‘227 encompasses a surfactant because of its open-ended “comprising” language, it does not as a matter of law disclose it. The surfactant does not appear literally in (i.e., does not appear in a disclosed embodiment or example) or inherently from (i.e., cannot be at once envisaged by one of ordinary skill in the art) Sonnenschein et al. US ‘227. Instead the Final Office Action has improperly and unsupportedly asserted that the polyethylene glycol diacrylate of Sonnenschein et al. US ‘227 is a neutral or basic surfactant. Applicants have shown herein that polyethylene glycol diacrylate is not a surfactant, and thus not a neutral or basic surfactant, as its structure is clearly inconsistent with that of an amphiphilic

compound and with the meaning of the term surfactant as it is understood and used in the art. Since Sonnenschein et al. US '227 does not recite a surfactant, it cannot and does not anticipate the instant claims.

Accordingly, Sonnenschein et al. US '227 does not disclose the instant 2-part adhesive formulation as in claims 1 or 7 or the instant composition as in claim 9. By analogy to the respective remarks given above in Reason 1, Sonnenschein et al. US '227 does not disclose the instant 2-part adhesive formulation as in claims 2 and 3, claim 4, claims 5 and 6; or the instant 2-part adhesive formulation as in claim 8; or the instant composition as in claims 10 to 12.

Similarly, the method of Sonnenschein et al. US '227 lacks use of the instant neutral or basic surfactant or combination thereof. Accordingly, Sonnenschein et al. US '227 does not disclose the instant method as in claim 13. By analogy to the respective remarks given above in Reason 1, Sonnenschein et al. US '227 does not disclose the instant method as in claims 14 or 15.

In view of the above remarks, claims 1-15 are patentable under 35 USC §102(b) in view of Sonnenschein et al. US '227.

### ***Claim Rejections – 35 U.S.C. § 103***

In the Office Action, claim 16 is rejected under 35 U.S.C. § 103(a) as allegedly being obvious over the same Sonnenschein et al. US '227 reference. Applicants disagree.

The instant application is a §371 application from PCT/US2005/004097. Applicants previously enclosed with their December 22, 2009, reply a copy of their previous response of record to PCT Written Opinion that amended claim 1 to add the instant limitation of a neutral or basic surfactant and a copy of an Analytical Report. Applicants' response to PCT Written Opinion also provided a basis for nonobviousness of claim 16 (as well as claims 1-15) and evidence in support thereof in a form of the Analytical Report. Applicants hereby incorporate their previous response to PCT Written Opinion and the Analytical Report here by reference.

As discussed previously, while Sonnenschein et al. US '227 mentions water as an example of an optional carrier additive, Sonnenschein et al. US '227 does not literally or inherently disclose a surfactant or the instant 2-part formulation. Thus Sonnenschein et al. US '227 does not literally or inherently disclose the instant method of claim 16 employing the 2-part formulation containing, among other things, the neutral or basic surfactant or combination thereof to the low energy surface substrate as in claim 13 wherein the low energy surface substrate is further limited in claim 16 by "the low surface energy substrate is an isotactic polypropylene."

Applicants mentioned previously in their response to PCT Written Opinion, the instant inventors had discovered a method where water could be used as a carrier for a protected alkylborane complex in a first part of a two-part formulation. The inventors subsequently discovered that generally use of water as a carrier was not viable because water attacked and dissociated the alkylborane complex. See the copy of the Analytical Report that was enclosed with Applicants prior reply (submitted December 22, 2009, under 37 CFR 1.111). The Analytical Report indicates that upon combination of water and the alkylborane complex, a reaction occurred resulting in substantial loss of the alkylborane complex. Note the difference in ratio area counts of the alkylborane complex when in solvent acetonitrile, which did not contain significant amount of water, versus when in water or when in a water/acetonitrile blend.

Applicants further discovered, however, that addition of the instant neutral or basic surfactant or combination thereof enabled use of water with the alkylborane complex in the first part of the two-part formulation. It is only when the neutral or basic surfactant or combination thereof is used that the alkylborane complex becomes stable in water. This beneficial effect of the neutral or basic surfactant or combination thereof is surprising and could not have been predicted from Sonnenschein et al. US '227.

Thus, the instant method of claim 16 employing the combination of a neutral or basic surfactant, water, and the protected alkylborane complex also is not disclosed or suggested by, and could not have been predicted from, Sonnenschein et al. US '227.



Accordingly Applicants believe that claim 16 (and for analogous reasons claims 1-15, for that matter) is not obvious in view of Sonnenschein et al. US '227 and patentable under 35 U.S.C. § 103(a).

***Conclusion***

In view of the above amendments and remarks, Applicants believe that the rejections are overcome and the invention of claims 1-16, is patentable and the application in condition for allowance. Applicants request continued examination and reconsideration and allowance of claims 1-16.

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